

AMENDMENTS TO THE SPECIFICATION

On the first page of the specification immediately above the title, please insert the following Heading

....TITLE OF THE INVENTION.....:

On the first page of the specification please amend the Heading to read as follows:

....~~BACKGROUND OF THE INVENTION~~....

On page 1, please amend the second full paragraph to read as follows:

....On the other end, in order to optimize overall efficiency when motoring, the propeller should match beside with the characteristics of the engine (torque power and efficiency characteristics in function of the RPM) also ~~will~~ with the hydro-dynamic characteristics of the hull and eventually even to prevalent conditions of navigation.

On page 1, please amend the penultimate paragraph to read as follows:

.... Generally, these propellers comprise a ~~pignon~~ pinion hub that is keyed or in any other way rotated by the drive shaft, on which engage two or more planet gears present at the base of the stems of the propeller blades.

Please amend last paragraph at page 1 to read as follows:

....Each blade, the stem of which is ~~rotatably~~ pivotally held in a hole of an outer shell, is free to rotate about the axis of the base planet gear upon the run of the planet gear on the conical ~~pignon~~ pinion -hub through two opposite limit angles from a central or neutral position of the blades at which the two major faces of the blades are substantially parallel to the drive shaft under the

hydraulic forces acting on it. The limit angles are pre-established by appropriate stops which determine the pitch of the propeller in the two directions of rotation.

On page 2, please amend the first full paragraph to read as follows:

....The outer shell that is normally formed by sectors joined together by tangential screws, encloses the ~~pignon~~ pinion-hub and the planet gear of the blades that are ~~rotatably~~ pivotally sustained in respective holes through the wall of the shell. Of course, the shell is free to rotate about the axis of the ~~pignon~~ pinion-hub within said two opposite limit angles of orientation of the blades as it is either dragged or drags along the blades planetary engaged on the ~~pignon~~ pinion-hub around its axis.

On page 2, please amend the second full paragraph to read as follows:

....The stops of said arc of freedom of rotation of the shell-blade assembly about the ~~pignon~~ pinion-hub axis are pre-established by the cooperation of circular sectors or radial teeth abutting one against the other and mechanically connected one to the outer shell and the other to the ~~pignon~~ pinion-hub, in order to determine said stops in both directions of mutual rotation of the two parts.

On page 2, please amend penultimate paragraph to read as follows:

....To this end, a sleeve engageable with the ~~pignon~~ pinion-hub body ~~in~~ at different angular positions and held so engaged by a spring is employed.

On page 2, please amend the last paragraph to read as follows:

....The stem of said sleeve passing through an axial hole of the ogive terminal of the propeller may be pulled outwardly against the contrasting force exerted by the spring to disengage the sleeve from the ~~pignon~~ pinion-hub and which may then be reengaged in a different angular position on the ~~pignon~~ pinion-hub, thus modifying the pitch.

On page 3, please amend the second full paragraph to read as follows:

....Further advantages of the propellers disclosed in the latter patents mentioned above were provided by an improved manner of mounting the blades ~~turnable~~ that may pivotally turn through the containment and support shell and by the introduction of resilient shock absorbing elements between the abutment surfaces on the end stops in order to dampen the impacts when starting rotation of the propeller in one or in the other direction.

On page 3, please amend the third full paragraph to read as follows:

....In all these propellers having an adjustable internal ~~kinematism~~ kinematic system of transmission of the torque from the drive shaft to the ~~pignon~~ pinion-hub and eventually to the shell-blade assembly of the propeller, it is of paramount importance to dampen the shocks caused by the impacts between the surfaces of the end stops that define the arc of freedom of rotation of the planetary mounted blades, in order to prevent or reduce the ~~audible~~ audible shock noise when starting to rotate the propeller and that specially when maneuvering for docking or other reasons becomes repetitive because of the numerous inversions of the direction of rotation (forward thrust / backward thrust) as well as to reduce wear and deformation of the metallic stop surfaces of the cooperating parts of the inner torque transmission ~~kinematism~~ kinematic system of the propeller.

On page 4, please amend the first full paragraph to read as follows:

....With the objective of enhancing a dampening action of these shocks to which important parts of the propeller are subjected, beside the use of special inserts between the abutting surfaces of the stops that define the angular bounds of freedom of mutual rotation of the shell-blade assembly and of the ~~pignon~~ pinion-hub assembly, additional resilient elements of elastomer have been introduced to share among them part of the stress in order to spread on a relatively large number of elastomer elements the strain and thus reduce the rate of degradation with time of their ability to resiliently absorb the shock stresses and increase the effective lifetime of these resilient shock absorbing elements.

On page 4, please amend the second full paragraph to read as follows:

.... According to a known practice, a typical shock absorbing device for these type of propellers is commonly realized, by purposely realizing the ~~pignon~~ pinion-hub, in two parts.

On page 4, please amend the fourth full paragraph to read as follows:

....The second part of the ~~pignon~~ pinion-hub is constituted by a cylindrical sleeve provided with a terminal flange and that is slid over the cylindrical part of the first sleeve.

On page 4, please amend the fifth full paragraph to read as follows:

....This second cylindrical sleeve has at one end a conical ~~pignon~~ pinion toothing while a plurality of pins uniformly distributed around a circumference of its terminal flange and the pins extends from the end face thereof.

On page 5, please amend the first full paragraph to read as follows:

....In this way, the accidental shock that may occur to the rotating blades of the propeller as well as the impacts between mutually abutting stop surfaces of the internal ~~kinematism~~ kinematic system of the propeller that occur upon starting rotation in a direction, are in part absorbed also by the numerous annular inserts of elastomer that are (pinched) compressed by the respective pins similarly to what happens to the resilient inserts between the metallic stop surfaces of the pitch setting arc of freedom of mutual rotation between the ~~pignon~~ pinion-hub assembly and the outer shell – planetary mounted blade assembly.

On page 5 please amend the fourth full paragraph to read as follows:

....Often, a protracted use of the boat well beyond the times of scheduled maintenance operations for many a reason, bring the propeller to work ~~noisely~~ noisily under conditions of extreme degradation of the resilient inserts of elastomer before substitution of these inserts may take place. This often results in a severe deformation of the metallic stop surfaces which may eventually impose costly repairs and /or substitution of worn out pieces.

On page 5, please amend the last paragraph to read as follows:

....A need or opportunity exists of further increasing the lifetime of these shock absorbing resilient inserts of elastomer as well as of preventing that an excessive degradation and/or accidental shocks of extraordinary violence bring about a substantially complete destruction of these inserts and cause ~~untolerable~~ intolerable noisy operation of the propeller and a deformation of functionally important metallic stop surfaces.

On page 6, before the first full paragraph please add the Heading::

.....SUMMARY OF THE INVENTION.....

On page 6, please amend the penultimate paragraph to read as follows:

....The plurality and randomness in timing because of ~~unidentical~~ different elastic behavior of the multiple inserts of elastomer of the metal/metal stops determine in practice a certain randomness of the intensity of the distinct abutments of the metal stops surfaces that further enhances the overall effectiveness of the novel shock absorbing device of the present invention.

.....

On page 7, between the third and fourth paragraphs please insert the following Heading:

....BRIEF DESCRIPTION OF THE DRAWINGS....

On page 7, please amend the fourth full paragraph to read as follows:

....~~Figure 1~~ **Figures 1a and 1b** ~~is a view~~ are views partially in cross-section of a pitch adjustable propeller with feathering blades, provided with the enhanced shock absorbing device according to the present invention.

On page 7, please amend the fifth full paragraph to read as follows:

....~~Figures 2 and 3~~ **2a, 2b and 3a, 3b** are views of the first and second flanged cylindrical sleeves, respectively, that cooperatively realize the ~~pinion~~ pinion-hub of the propeller.....

On page 7, beneath the fifth full paragraph please insert the following Heading:

.....DETAILED DESCRIPTION OF EMBODIMENTS.....

Please amend the paragraph bridging pages 7 and 8 to read as follows:

.... With reference to the drawings, wherein the same parts are identified with the same numbers, ~~Figure 1~~ Figures 1a and 1b ~~shows~~ show in a simplified and partial manner ~~a sample an~~ exemplary organization of parts of a pitch adjustable propeller with feathering blades, embodying the enhanced shock absorbing device of this invention.

On page 8, please amend the second full paragraph to read as follows:

....Nevertheless, by observing ~~Figure 1~~ Figures 1a and 1b, certain fundamental characteristics of this type of propeller may be briefly recalled.

On page 8, please amend the third full paragraph to read as follows:

....The drive shaft 1 of the propeller rotates a ~~pignon~~ pinion-hub 2 onto which engage two or more planet gears 3, present at the base of the respective stems 4 of the blades 5, sustained through holes of the external shell 6 of the propeller.

On page 8, please amend the fifth full paragraph to read as follows:

....The angular limits of freedom of relative movement of the planet gears 3 of the blades on the ~~pignon~~ pinion-hub 2, that is the angular limits of the freedom of self orientation of the blades ~~rotatably~~ pivotally sustained through respective holes of the shell 6 under the effect of water resistance, from a neutral or central position as long as the boat advances under sail (drive shaft 1 idle) to a set stop that determines a certain pitch of the (screw) propeller in that direction of rotation, are established by a radial tooth 8, that in the example shown is mechanically connected to the drive shaft 1 through an axial extension 9 whose conical ~~pignon~~ pinion end 10 engages with the planet gears 3 of the blades. The circular sector or radial tooth 8 cooperates with stop

surfaces of a circular sector cavity into which the tooth 8 is confined that is mechanically connected to the shell 6, being formed in a terminal body 11 thereof, the end of which is eventually closed by an ogive 12 of the propeller.

On page 8, please amend the last paragraph to read as follows:

....The ~~pignon~~ pinion-hub 2 is composed of two flanged cylindrical sleeves that are shown in more detail in Figures ~~2 and 3~~ 2a, 2b and 3a, 3b, respectively.

On page 9, please amend the second full paragraph to read as follows:

.....The second cylindrical sleeve 17 has at one end a conical ~~pignon~~ pinion toothing 2 and is slipped over the cylindrical portion of the first sleeve 13 around which may rotate.

On page 9, please amend the penultimate paragraph to read as follows:

....Construction details of the components of the enhanced shock absorber device of this invention may be better observed in the detailed Figures ~~2 and 3~~ 2a, 2b and 3a, 3b, of the first flanged cylindrical sleeve 13 and of the second flanged cylindrical sleeve 17, composing the ~~pignon~~ pinion-hub 2 of the propeller of ~~Figure 1~~ Figures 1a and 1b.